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Mammals from the Near East in Polish collections

Ssaki z Bliskiego Wschodu w polskich kolekcjach

Abstract. Mammals from Turkey, Syria, Lebanon, Israel, Cyprus and Iraq stored in Polish collections are described. Additional records of 47 taxa of mammals are given from the Near East.

I. INTRODUCTION

Mammals from the Near East are still unsufficiently known. Recently, new collections from this region have been accumulated in various European countries. First mammals from the Near East in Poland come from collections of T. VETULANI and J. SAGAN stored in the thirties and the forties. In 1958, K. KOWALSKI collected mammals in Lebanon. Relatively abundant materials from Turkey, Syria and Iraq were collected within the period 1972—1977 during several student expeditions and an expedition of the Institute of Systematic and Experimental Zoology, Polish Academy of Sciences headed by K. KOWALSKI. Preliminary results were presented during II International Theriological Congress in Brno (RZEBIK-KOWALSKA and NADACHOWSKI 1978, ŚMIEŁOWSKI 1978). Some detailed informations concerning the distribution, taxonomy and biometry of selected species have also been published (KOWALSKI 1958, NADACHOWSKI et al. 1978, RZEBIK-KOWALSKA et al. 1978, PRADEL 1981).

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II. MATERIAL AND METHODS

The material presented in this paper originates mainly from (1) four student expeditions of A. Mickiewicz University of Poznań, Silesian University of Katowice and the Academic Centre of Wrocław organized in the years 1972—1974, and (2) an expedition of the Institute of Systematic and Experimental Zoology, Polish Academy of Sciences, Cracow, organized by K. KOWALSKI in collaboration with the Biological Research Centre in Baghdad. Smaller collections come from field work of T. VETULANI in Turkey (1934), J. SAGAN in Iraq and Palestine (during the period 1942—1945), K. KOWALSKI in Lebanon (1958) as well as K. KOWALSKI and B. RZEBIK-KOWALSKA in Cyprus (1986).

The animals were caught with the use of snap-traps placed closely to occupied burrows. Dead mammals found on roads as well as samples of owl pellets were also included into the material. Observations of live specimens are also included here. For some species, the following measurements (in mm) of body and skull are reported: total length (body and tail) (ToL), tail length (TL), length of hind foot (LF), height of ear (HE), forearm lenght (FL for bats only), condylobasal length (CbL), brain-case length (BcL), length of nasals (LN), diastema length (DL), maxillary tooth-row length (MxTRL) (for *Crocidura* taken from I^1 to M^3), length of M^3 (only for *Crocidura*), mandibular tooth-row length (MdTRL), brain-case breadth (BcB), zygomatic breadth (ZyB), interorbital constriction (IC), rostrum breadth (RB) and braincase height between bullae (BcH), mandibular length (ML) and mandibular height, the latter two for *Crocidura* only.

Mice of the genus *Apodemus* were determined on the species level, among other things, on the basis of teeth measurements (acc. to HAITLINGER and RUPRECHT 1967).

Materials presented in this paper are stored in the following collections: Institute of Systematic and Experimental Zoology *, Polish Academy of Sciences, Cracow (ISEZ), Department of Zoology of Agriculture Academy, Poznań — collection of J. ŚMIEŁOWSKI (JS), Mammals Research Institute, Polish Academy od Sciences, Białowieża (MRI) and private collection of B. DOMINIAK, Katowice (BD).

III. LOCALITIES

Localities are arranged in the geographical order. The data include the exact position of the site and some information on vegetation, environment, etc. Species examined are listed in parantheses.

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* Since January 1990: Institute of Systematics and Evolution of Animals.

Turkey

1. Silivri, 41°03′N/28°20′E, cultivated fields (*Mus* cf. *abbotti*).
2. 5 km E from Sapanca, near Adapazari, 40°39′/30°18′E, xerothermic scrubs (*Apodemus sylvaticus*).
3. 6 km SE from Adapazari, 40°46′N/30°27′E, lowland with calciferous rocks overgrown with trees, mainly oaks, crossed with meadows and fields (observation of *Sciurus anomalus*).
4. 12 km W from Edremit, 39°37′N/26°53′E, bushes at olive grove limit, near a beach on Aegean Sea coast (about 15 m). Many burrows were found, after harvest, in neighbouring fields. Three live specimens were caught, in spite of the fact that snap-traps were used (*Crocidura* sp., *Apodemus flavicollis*, *Mus* cf. *abbotti*).
5. Ala Dağ (Köroglu Dağı), north from Ankara, 40°42′N/32°23′E, 1200 m above sea level, mountain grassland with single trees (*Crocidura* sp., *Microtus arvalis* group).
6. Ankara, 39°57′N/32°52′E, city (*Rattus rattus*).
7. 6 km W from Bergama, 39°05′N /27°07′E, lowland on Aegean Sea coast (*Microspalax leucodon*).
8. 50 km south from Ankara, 39°49′N/32°45′E, meadow near a stream surrounded by cultivated fields (*Microtus guentheri*).
9. 90 km south from Ankara, 39°18′N/33°03′E, cultivated field (after harvest). Many new burrows with fresh sand at the entrances were stated in hedgerow bushes (width about 1.5 m) overgrown with weeds (*Mesocricetus brandti*).
10. Erzurum, 39°52′N/41°25′E, (*Capra aegagrus*).
11. Afyon Karahisar, 38°47′N/30°44′E, 1000 m above sea level, dry steppe environment (*Mus* cf. *abbotti*).
12. Antalya, 36°51′N/30°41′E, bushes on the sea coast (*Hystrix indica*).
13. Bolkar Dağlari, below Zanapa, 1300 m above sea level 37°33′N/34°12′E, shrubs near a mountain river (*Apodemus sylvaticus*).
14. Bolkar Dağlari, above Zanapa, 2400 m above sea level, 37°21′N/34°19′E, mountain grassland with rocks (*Chionomys nivalis*, *Apodemus sylvaticus*).
15. 95 km N from Tarsus, 37°35′N/34°56′E, highland terrain, not cultivated — arid, and covered by xerophilous plants (*Spermophilus citellus*).
16. Toprakkale, E from Adana, 36°09′N/37°06′E, ruins of a crusader castle (owl pellets: *Crocidura* sp., *Myotis blythi*, *Pipistrellus kuhli*, *Cricetulus migratorius*, *Microtus* cf. *irani*, *Meriones* cf. *tristrami*, *Rattus rattus*, *Mus* cf. *abbotti*).
17. Belen, between Iskenderun and Antakiya, 36°31′N/36°09′E, specimen found on the road (*Meriones tristrami*).

18. 50 km E from Kayseri, 38°50′N/35°53′E, meadow close to a streamlet (*Crocidura* sp.)
19. 50 km E from Urfa, 37°08′N/38°50′E, specimen found on the road (*Lepus europaeus*).

Syria

20. 26 km N from Tartous, 35°07′N/35°53′E, harvested cultivated field on a rocky coast of the Mediterranean (*Meriones tristrami*, *Mus* cf. *abbotti*).
21. Krak des Chevaliers (Kalaat el Hosn), 34°45′N/36°21′E, ruins of a crusader castle (*Myotis blythi*, *Cricetulus migratorius*, owl pellets: *Suncus etruscus*, *Crocidura* sp,. *Myotis myotis*, *Cricetulus migratorius*, *Microtus guentheri*, *Meriones* cf. *tristrami*, *Microspalax leucodon*, *Rattus rattus*, *Mus* cf. *abbotti*).
22. 100 km E from Damascus, 30°36′N/36°44′E, desert environment (*Jaculus jaculus*).

Lebanon

23. 5 km from Beirut, Jamhour Cave, 33°45′N/35°30′E, (*Rousettus aegyptiacus*).
24. Sannine Mts, 33°56′N/35°47′E, (*Microtus guentheri*).
25. Kammouha Mts, 34°40′N/35°10′E, (*Microtus guentheri*).

Israel

26. Tel Aviv, 32°04′N/34°46′E (*Rousettus aegyptiacus*).
27. Beit Jiriya, 31°43′N/39°02′E, (*Hemiechinus auritus*).

Cyprus

28. Paphos, 34°43′N/32°23′E, (owl pellets: *Suncus etruscus*, *Crocidura cypria*, *Rattus rattus*, *Mus* cf. *abbotti*)

Iraq

29. Qali Ali Beg, 36°38′N/44°25′E, xerotermic shrubs near a mountain stream (*Crocidura* sp., *Myotis nattereri*, *Apodemus mystacinus*, *Mus* cf. *abbotti*).
30. 20 km E from Mosul (Al Mawsil), 36°16′N/43°28′E, cultivated field after grain harvest (*Meriones tristrami*).
31. 20 km N from Shaqlawa, 36°32′N/44°20′E, (*Hystrix indica*, *Meles meles*).
32. 12 km W from Shaqlawa, 36°19′N/44°09′E, near a streamlet on stony road leading to a village. The terrain full of folds, overgrown with individual trees of *Crataegus* and dwarf oaks, and of extensive pasturing (*Apodemus flavicollis*).

33. Serchinar, 5 km S from Sulaimanyia, 35°30′N/45°16′E, shrubs near a streamlet (*Mus* cf. *abbotti*).
34. Hatrah (Al-Hadar), 90 km SW from Mosul, 35°34′N/42°43′E, ruins of a Parthian town (owl pellets: *Taphozous nudiventris*, *Tatera indica*, *Meriones* cf. *crassus*, *Nesokia indica*, *Eliomys melanurus*, *Jaculus jaculus*, *Allactaga euphratica*).
35. Tharthar Lake, 34°06′N/42°45′E, scrubs of reed near the shore (*Mus* cf. *abbotti*).
36. Hudeit, 10 km W from Baguba, 33°43′N/44°38′E, lowland with cultivated fields (*Mus* cf. *abbotti*).
37. Khanaquin, 34°19′N/45°23′E (*Canis aureus*, *Vulpes vulpes*, *Hyaena hyaena*, *Gazella* sp., *Capra aegagrus*).
38. 40 km E from Rutba (Ar-Rutba), 33°03′N/40°40′E, desert rocky terrain (owl pellets: *Paraechinus aethiopicus*, *Lepus europaeus*, *Gerbillus* sp., *Meriones* cf. *lybicus*, *Meriones* cf. *crassus*, *Jaculus jaculus*).
39. Akarkuf (Aquerquf), 20 km W from Baghdad, 33°18′N/44°09′E, near a ziguratt (owl pellets: *Suncus etruscus*, *Crocidura* sp., *Gerbillus* sp., *Tatera indica*, *Mus* cf. *abbotti*, *Nesokia indica*).
40. Baghdad, 33°21′N/44°26′E, city (*Asellia tridens*, *Tatera indica*).
41. 40 km S from Kerbela (Karbela) 32°26′N/43°53′E, caves in desert cliffs (*Taphozous nudiventris*, *Asellia tridens*).

IV. SYSTEMATICS

Insectivora

Hemiechinus auritus (Gmelin, 1770)

Material: Israel — Beit Jirja, 18.08.1943, 1 specimen, skin with skull inside, ISEZ 984, leg. J. Sagan; Iraq — Mosul (Al Mawsil) Liwa, 1968, 1 specimen, skull and skin, ISEZ 4955, gift of Biol. Res. Centre Baghdad; no exact locality, 1967, 1 specimen, skull, ISEZ 4962, gift of Biol. Res. Centre, Baghdad.

Measurements: 4955 and 4962: CbL (42.2, 39.0), BcB (19.8, 19.8), IC (11.0, 11.0), BcH (12.4, 11.8), ML (29.7, 27.4), HM (17.0, 15.8).

Paraechinus aethiopicus (Ehrenberg, 1833)

Material: Iraq — 40 km E from Rutba, 27.07.1977, owl pellets (1 maxilla), ISEZ 5169, leg. K. Kowalski et al.

Remarks: The specimen derived from owl pellets is fragmentary, without any important elements such as P^2 and mandible; it belongs to a very young specimen (the change of deciduous teeth into permanent ones is visible). The

size and position of alveoli of premolars show a great similarity to *P. aethiopicus*. In Iraq, it is known from Qasr al Helqum (Syrian desert), Haditha and the vicinity of Baghdad (HATT 1959, HARRISON 1964).

Suncus etruscus (SAVI, 1822)

Material: Syria — Krak de Chevaliers, 23.07. 1977, owl pellets (6 maxillae, 5 right and 12 left mandibles), ISEZ 5176, leg. K. KOWALSKI et al.; Cyprus — Paphos, 08.1986, owl pellets (42 maxillae, 57 right and left mandibles), ISEZ 7992, leg. K. KOWALSKI and B. RZEBIK-KOWALSKA; Iraq — Akarkuf, 02. 1976, owl pellets (1 left mandible), ISEZ 5085, leg. A. NADACHOWSKI and B. RZEBIK-KOWALSKA.

References: RZEBIK-KOWALSKA and NADACHOWSKI (1978), KOCK and NADER (1983).

Crocidura sp.

Material: Turkey — 12 km W from Edremit, 8.08.1973, 2 juv. males, skulls and bodies in alcohol, JS 14, 15, leg. J. ŚMIEŁOWSKI; Ala Dağ, 19.08. 1977, 1 specimen, skull and body in alcohol, ISEZ 5255, leg. K. KOWALSKI et al.; 50 km E from Kayseri, 23.09.1973, 1 juv. female, skull and body in alcohol, JS 27, leg. J. ŚMIEŁOWSKI; Toprakkale, 17.08.1977, owl pellets (49 maxillae, 28 right and 17 left mandibles), ISEZ 5164, leg. K. KOWALSKI et al.; Syria — Krak des Chevaliers, 23.07.1977, owl pellets (15 maxillae, 9 right and 7 left mandibles), ISEZ 5176, leg. K. KOWALSKI et al.; Iraq — Qali Ali Beg, 7 specimens (1 male, 4 females, 2 sex undetermined), skulls and skins, 1 specimen in alcohol, ISEZ 5221, 5255b—5260, leg. K. KOWALSKI et al.; Akarkuf, 02.1976, owl pellets (1 maxilla, 1 right and 1 left mandible), ISEZ 5085, leg. A. NADACHOWSKI and B. RZEBIK-KOWALSKA.

Measurements: Table I.

Remarks: The taxonomy and distribution of shrews belonging to genus *Crocidura* WAGLER, 1832 in the Near East are not clear. Many authors carried out numerous detailed studies concerning the genus in Turkey, Iraq, Syria, Israel and Lebanon (ANDĚRA 1972, FELTEN et al., 1973, HARRISON 1956, 1963, 1964, JENKINS 1976, KOCK et al. 1972, 1983, SPITZENBERGER 1978, etc.), but the problem of distinguishing forms living in this region on the basis of their morphological features is still difficult.

Several species with numerous subspecies have been previously listed from this area. In more recent works, the authors most frequently mentioned *Crocidura suaveolens* PALLAS, 1811, *C. russula guldenstaedti* (PALLAS, 1811), *C. russula monacha* THOMAS, 1906, *C. leucodon* (HERMANN, 1780) and *C. lasia* (THOMAS, 1906). The karyological and biochemical studies of CATZEFLIS et al. (1985) have proved that the shrews previously included to *C. russula*

Table I

Dimensions of *Crocidura* sp.

No.	Sex	ToL	TL		LF	HE	CbL	Mx TRL	IC	Md TRL	ML	MH
			mm	%								
14	♂	123	42	52.5	—	—	18.7	8.4	4.1	3.9	10.2	4.5
15	♂	113	42	58.7	—	—	18.0	8.6	4.1	3.9	9.7	4.4
5255	?	105	30	40.0	13	6	17.6	8.6	4.1	4.1	9.3	4.6
27	♀	—	—	—	—	—	—	8.2	4.0	3.8	9.4	4.1
5221	♀	125	45	56.2	13	8	—	7.8	—	3.7	9.5	4.3
5255b	?	—	44	—	12	—	—	—	—	3.9	9.5	4.6
5256	♀	112	45	67.2	12	6	—	—	—	3.8	8.9	4.1
5257	♀	121	41	51.2	13	—	—	8.3	—	4.0	9.4	4.6
5258	♀	111	42	60.9	11	7	—	8.3	—	3.9	9.0	4.3
5259	♂	—	43	—	14	—	—	8.6	—	—	—	4.7
5260	?	122	45	58.4	14	6	18.1	8.6	4.1	4.1	9.6	4.5

Length of M^3 in different species of *Crocidura* (number of collection, dimensions in brackets):

Crocidura sp. — 14 (0.73), 15 (0.72), 5255 (0.63), 27 (0.68), 5221 (0.72), 5255b (0.76), 5256 (0.71), 5257 (0.76), 5258 (0.77), 5259 (0.77), 5260 (0.78).

Crocidura leudodon — Yugoslavia, ISEZ 5920 (0.67), Poland MRI 147 (0.62—0.66), Georgia, ISEZ 2096 (0.60).

Crocidura suaveolens — Crimea, 20214 (0.69), Iran, 6142 (0.75), Israel, 7910085 (0.75), Saudi Arabia, 831104 (0.78) (according to HUTTERER and HARRISON 1988, measurements have been taken from drawings).

guldenstaedti and *C. russula monacha* are in fact nothing but *C. suaveolens*. This latter shrew shows a great morphological and biochemical polymorphism and that is why it has been confounded systematically with *C. russula* and described, under separate names, as its subspecies. Its karyotype is, however, invariable in all European and eastern Mediterranean populations. As we know now, the range of true *C. russula* is limited to Western and Central Europe and to North Africa from Morocco to Libya.

To clarify the situation of shrews referred to the group *C. leucodon-lasia*, further analyses are needed. This is so because CATZEFLIS et al. (1985) have found in Turkey exclusively the karyotypes characteristic for *C. leucodon* (2n = 28) and *C. suaveolens* (2n = 40). HUTTERER and HARRISON (1988), who re-examined the ATALLAH'S *C. lasia* material from Lebanon (ATALLAH and HARRISON 1967) have not found any morphological character useful for distinguishing it from *C. leucodon*. In consequence, these authors have also doubts about the distinct taxonomic status of *C. lasia*.

It is most probable that the region discussed in this work is inhabited by two species only: *C. suaveolens* and *C. leucodon*. On the other hand, the dimensions of *C. suaveolens* (including *C.r. guldenstaedti* and *C. r. monacha*) and *C. leucodon* overlap in this area, because the former is much bigger than it is in Europe. Also, the external characters and those concerning skull and dentition, usually taken as a basis for the separation of both forms, are not always

sufficient in this case. For example, *C. leucodon* is usually characterized by a sharp demarcation line along the flanks between the colour of the dorsal and ventral surface; however the young animals from more humid places can be more or less uniform in colour as in *C. suaveolens*. The tail length of *C. leucodon* is, according to many authors, 40—60% of the head and body length, while in *C. suaveolens* it is as much as 60—80%. One of our specimens, from Qali Ali Beg (5257) in Iraq has tail length typical for *C. leucodon* (51% of head and body length) but its uniform colour of pelage, large (bulbous) third upper molar M^3*, the lack of sagittal crest and the length of upper toothrow inferior to 8.8 mm indicate the characters of *C. suaveolens* (FELTEN et al. 1973, JENKINS 1976, HUTTERER and HARRISON 1988). The same mixture of features of both species is visible in specimens from Edremit (14) and from Ala Dağ (5255) in Turkey. The latter has an extremely short tail (30 mm, 40% of body length) and a small, short M^3 as in *C. leucodon*, but it is generally small (its upper toothrow is shorter than 8.8 mm) and its pelage, dorsal and ventral, do not differ at all. The determination is much more difficult when we have in our disposal materials from owl pellets only.

Most probably, the specimens of our collection belong to *C. suaveolens*, although the presence of *C. leucodon* in the material cannot be excluded. *C. leucodon* was already recorded from Turkey by FELTEN et al. (1973), JENKINS (1976) and from Iraq by HATT (1959) and HARRISON (1964). However, its presence in Kurdistan is not certain (NADER 1969, HARRISON, 1972). In some places *C. leucodon* was captured together with *C. suaveolens*. It can also be present in Syria, because among skulls found in the owl pellets from Krak des Chevaliers there is a big specimen whose upper toothrow exceeds 8.8 mm and whose M^3 is rather slim (not bulbous). The locality is near the Syrian coast and also not far from Lebanon and Israel, where *C. leucodon* has been mentioned by HARRISON (1963, 1964), ATALLAH and HARRISON (1967), KUMERLOEVE (1975a, 1975b) and others.

Crocidura cypria BATE, 1903

Material: Cyprus — Paphos, 08.1986, owl pellets (67 maxillae, 81 right and 82 left mandibles), ISEZ 7992, leg. K. KOWALSKI and B. RZEBIK-KOWALSKA.

Remarks: For a long time the white toothed shrews of the genus *Crocidura* from Cyprus were determined as *C. russula cypria* (BATE 1903, CORBET 1978) or as *C. cypria* (SPITZENBERGER 1978) and only VESMANIS and VESMANIS (1982) indicated its morphological similarity to *C. suaveolens*.

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* Measurements of 8 M^3 of *C. leucodon* from Poland, 1 M^3 from Georgia and 1 M^3 from Yugoslavia indicate that this tooth is less bulbous in its posterior part than M^3 of *C. suaveolens* (see Tab. I and HUTTERER and HARRISON 1988). More measurements are needed to check this feature.

Cytological and biochemical studies of CATZEFLIS (1983) have proven that the chromosome number of *Crocidura* from Cyprus is the same as in *C. suaveolens* from Europe. However, considering the large morphological and genetical variations between populations of *C. suaveolens*, the genetic isolation of the island population and the genetic distance of the island population to continental *C. suaveolens*, CATZEFLIS et al. (1985) have proposed to keep provisionally the name *C. cypria* for this shrew. Further investigations are needed to answer the question whether a subspecific level (*C. suaveolens cypria*) can be justified.

Chiroptera

Rousettus aegyptiacus (GEOFFROY, 1810)

Material: Lebanon — near Beirut (Jamhour Cave), 28—29.03.1958, 10 specimens (skulls and skins, one specimen in alcohol), 5 males, 2 juv. females, 3 sex unknown, ISEZ 1036—1040, 1042—1043, 1186, 1497, 6288, leg. K. KOWALSKI; Israel — Tel Aviv, 11.1944, 1 male, skin, ISEZ 1077, leg. J. SAGAN.

Measurements: Table II.

Remarks: The nominative form is one of the most common bats in Lebanon and Israel (HARRISON 1964).

Table II

Dimensions of *Rousettus aegyptiacus*

No.	Sex	ToL	TL	FL
1036	♂	120	15	97
1037	♂	140	17	95
1039	♂	115	17	88
1042	♀	110	17	88
1043	♀	97	15	78

Taphozous nudiventris CRETZSCHMAR, 1830

Material: Iraq — Al Anbar Prov., 1970, 1 specimen, skin and skull, ISEZ, 4957, gift of Biol. Res. Centre. Baghdad; Hatrah, 02.1976, owl pellets (2 maxillae, 2 right and 2 left mandibles), ISEZ 5090, leg. A. NADACHOWSKI and B. RZEBIK-KOWALSKA; 40 km S from Kerbela, 29.07.1977, owl pellets (1 skull, 2 right and 3 left mandibles), ISEZ 9051, leg. K. KOWALSKI et al.

References: NADACHOWSKI et al. (1978).

Remarks: Subspecies *T. nudiventris magnus* WETTSTEIN, 1913 is widespread along the rivers of middle and southern Iraq (HATT 1959, HARRISON 1964, AL-ROBAAE 1968). The record in Hatrah is the most northern occurrence of this species in the Near East.

Asellia tridens (GEOFFROY, 1813)

Material: Iraq — Baghdad, 1966, 1 specimen, skull and skin, ISEZ 4959, gift of Biol. Res. Centre, Baghdad; 40 km S from Kerbela, 29.08.1977, 2 specimens in alcohol, ISEZ 5157a, 5157b, owl pellets (1 maxilla, 2 right and 2 left mandibles), ISEZ 5157, leg. K. KOWALSKI.

Remarks: The nominative form is very abundant and common in Iraq where suitable roosting places are found (HARRISON 1964).

Myotis nattereri (KUHL, 1818)

Material: Iraq — Qali Ali Beg, 10.08.1977, 11 specimens in alcohol, 6 males, 4 females, 1 sex unknown, ISEZ 5148—5156, 5159—5160, leg. K. KOWALSKI et al.

Measurements: RZEBIK-KOWALSKA et al. (1978).

Literature: RZEBIK-KOWALSKA and NADACHOWSKI (1978), RZEBIK-KOWALSKA et al. (1978).

Remarks: The population from Qali Ali Beg has special features especially in dentition (RZEBIK-KOWALSKA et al. 1978) and its subspecific status is uncertain. More material should be examined to determine whether these differences of dental pattern are in fact significant.

Myotis myotis (BORKHAUSEN, 1797)

Material: Syria — Krak des Chevaliers, 23.07.1977, owl pellets (1 left mandible), ISEZ 5176, leg. K. KOWALSKI et al.

Myotis blythi (TOMES, 1857)

Material: Turkey — Toprakkale, 17.08.1977, owl pellets (2 skulls, 1 right and 1 left mandibles), ISEZ 5164, leg. K. KOWALSKI et al,: Syria — Krak de Chevaliers, 23.07.1977, 1 specimen in alcohol. ISEZ 5161, leg. K. KOWALSKI et al.

Remarks: The external features of *M. blythi omari* THOMAS, 1906, found already earlier in Krak des Chevaliers (HARRISON and LEWIS 1961) are very similar morphologically to *M. myotis macrocephalicus* HARRISON et LEWIS, 1961. Our specimen resembles the former taxon.

Pipistrellus kuhli (KUHL, 1819)

Material: Turkey — Toprakkale, 17.08.1977, owl pellets (1 maxilla), ISEZ 5164, leg. K. KOWALSKI et al.; Iraq — Baghdad Liwa, 1967, skull and skin, ISEZ 4961, gift of Biol. Res. Centre, Baghdad.

Remarks: This species is one of the most abundant and ubiquitous bats in the region and the specimen from Iraq belongs to *P. kuhli ikhwanius* CHEESMAN et HINTON, 1924.

Eptesicus bottae (PETERS, 1869)

Material: Iraq — Diyala Liwa, 1966, skull and skin, ISEZ 4960, gift of Biol. Res. Centre, Baghdad.

Remarks: Subspecies *E. bottae hingstoni* THOMAS 1919 is widely distributed in Iraq (HATT 1959, HARRISON 1964).

Lagomorpha

Lepus europaeus PALLAS, 1778

Material: Turkey — 50 km E from Urfa, 16.08.1977, 1 specimen juv., fragment of skin and skeleton, ISEZ 5197, leg. K. KOWALSKI et al.; Iraq — 40 km E from Rutba, owl pellets (limb bones), IZES 5169, leg. K. KOWALSKI et al.

Measurements: ToL: 450, TL: 60, LF: 120, HE: 125.

Remarks: Tail and ears relatively long, tips of the ears have pronounced black paths externally. The specimen examined belongs probably to *L. europaeus syriacus* EHRENBERG, 1833.

Rodentia

Sciurus anomalus GÜLDENSTAEDT, 1785

Material: Turkey — 6 km SE from Adapazari, 28.10.1973, 1 specimen was observed (J. ŚMIEŁOWSKI).

References: ŚMIEŁOWSKI (1978).

Spermophilus citellus (LINNAEUS, 1766)

Material: Turkey — 95 km N from Tarsus, 17.08.1974, 1 specimen, adult, sex?, JS 38, leg. J. ŚMIEŁOWSKI.

Remarks: It is the most eastern locality in South-East Turkey, according to up-to-date determinations. The closest locality is in Gordilas, between Niğde and Yesilhisar (OSBORN 1964).

Cricetulus migratorius (PALLAS, 1773)

Material: Turkey — Toprakkale, 17.08.1977, owl pellets (4 maxillae, 4 right and 4 left mandibles), ISEZ 5164, leg. K. KOWALSKI et al.; Syria — Krak de Chevaliers, 23.07.1977, 1 specimen, skull and body in alcohol, ISEZ 5275, owl pellets (10 skulls, 47 right and 50 left maxillae, 78 right and 72 left mandibles), ISEZ 5176, leg. K. KOWALSKI et al.

Measurements: ISEZ 5275 — CbL: 23.1, BcL: 15.0, DL: 7.0, MxTRL: 3.9, MdTRL: 3.9, BcB: 10.6, ZyB: 13.4, IC: 4.1, RB: 4.3, BcH: 7.5.

References: PRADEL (1981)

Remarks: The subspecies *C. migratorius cinerascens* WAGNER, 1848 is common in Turkey and Syria (HARRISON 1972).

Mesocricetus brandti (NEHRING, 1898)

Material: Turkey — 90 km S from Ankara, 26.07.1974, 3 specimens, 1 male, 2 females, skulls and bodies in alcohol, JS 30—32, leg. J. ŚMIEŁOWSKI.

Measurements: JS 30—32 — TOL: 177, 133, 140, TL: 28, 20, 20, FL: 18, 15, 16, HE: no data, CbL: 32.6, 27.9, 0, BcL: 21.3, 17,9, 0, LN: 12.7, 11.4, 0, DL: 9.8, 8.2, 8.5, MxTRL: 5.9, 5.9. 6.4, MdTRL: 5.8, 5.8, 6.2, BcB: 13.2, 12.5, 0, ZyB: 17.6, 15.4, 15.3, IC: 0, 4.2, 3.9, RB: 6.5, 5.6, 6.0, BcH: 10.0, 8.8, 0.

References: ŚMIEŁOWSKI (1978).

Remarks: This species is widespread in Central Anatolia (SPITZENBERGER 1972).

Chionomys nivalis (MARTINS, 1842)

Material: Turkey — Bolkar Dağlari above Zanapa, 19.07.1977, 2 specimens, female and male, skulls and skins, ISEZ 5264, 5267, leg. K. KOWALSKI et al.

Measurements: ISEZ 5264, 5267 — BL: 175, 178, TL: 67, 63, FL: 18, 19, HE: 14, 17, CbL: 28.3, 0, BcL: 17.9, 0, LN: 0, 7.4, DL: 9.0, 9.2, MxTRL: 6.3, 6.7, MdTRL: 6.2, 6.4, BcB: 13.0, 0, ZyB: 15.2, 16.0, IC: 4.6, 4.3, RB: 4.5, 5.0, BcH: 8.0, 0.

References: NADACHOWSKI (1990).

Remarks: This species is common in the Middle Taurus Mts. (SPITZENBERGER 1971) and belongs to the subspecies *Ch. nivalis spitzenbergerae* NADACHOWSKI, 1990 which is characterized by a very peculiar structure of dentition (NADACHOWSKI 1990).

Microtus arvalis group

Material: Turkey — Ala Dağ, 19.08.1977, 20 specimens (6 males, 5 females, 9 juvenile specimens), 20 skulls and 9 skins, ISEZ 5199—5200, 5202—5203, 5205—5220, leg. K. KOWALSKI et al.

Table III

Dimensions of *Microtus arvalis* group

No.	Sex	Age	ToL	TL	FL	HE	CbL	BcL	LN	DL	MxTRL	MdTRL	BcB	ZyB	IC	RB	BcH
5199	♂	subad.	128	31	17	12	—	—	6.8	7.3	5.8	5.8	—	—	3.6	3.9	—
5200	?	juv.	108	23	17	9	—	—	—	—	—	—	—	—	—	—	—
5202	?	juv.	110	18	15	9	—	—	5.7	—	—	—	—	—	3.8	4.1	—
5203	♀	ad.	140	26	18	11	25.1	—	—	—	—	—	—	14.4	4.0	—	—
5205	?	juv.	109	27	15	11	—	—	5.9	6.1	5.3	5.1	—	—	3.6	4.0	—
5206	?	juv.	90	16	16	9	—	—	—	6.2	5.1	5.4	—	—	3.6	—	—
5207	♀	ad.	162	40	16	—	26.5	—	—	—	—	—	11.8	15.0	3.7	—	7.3
5208	?	juv.	81	17	15	9	—	—	—	—	—	—	—	—	—	—	—
5209	?	juv.	—	27	17	11	—	—	—	—	—	—	—	—	—	—	—
5110	♂	subad.	120	25	16	12	—	—	—	—	—	—	—	—	3.6	—	—
5211	♂	juv.	127	31	17	10	—	—	6.1	—	—	—	—	—	4.0	3.9	—
5112	♀	ad.	133	31	18	12	24.4	15.8	7.0	7.0	6.0	5.9	11.8	13.0	3.6	4.8	—
5213	?	juv.	112	30	16	11	—	—	6.1	6.7	—	—	—	—	3.7	3.6	—
5214	♂	ad.	147	37	17	13	—	—	7.6	—	6.4	6.0	—	—	—	—	—
5215	♀	ad.	130	24	18	10	—	—	6.6	—	5.7	5.8	—	—	3.8	3.8	—
5216	♀	ad.	140	31	16	13	25.4	—	7.0	—	—	—	11.9	13.9	3.2	4.0	—
5217	?	juv.	113	28	16	11	—	—	—	—	5.4	5.3	—	—	—	—	—
5218	♂	juv.	111	28	15	10	—	—	—	—	—	—	—	—	3.5	3.6	—
5219	?	juv.	120	32	18	—	—	—	6.0	—	—	—	—	—	3.8	3.6	—
5220	♂	ad.	140	36	17	13	24.7	—	—	—	—	—	—	13.5	3.6	—	7.2

Measurements: Table III.

Remarks: The discovery of a new form within the *Microtus arvalis* group named *Microtus subarvalis* (MEYER et al. 1972) and further comprehensive studies especially in the European part of the USSR, Bulgaria, Romania and Yugoslavia has made a basis for the separation of *Microtus arvalis* (PALLAS, 1779) and *Microtus epiroticus* ONDRIAS, 1966 (= *M. subarvalis* MEYER, ORLOV et SKHOLL, 1972). They differ distinctly on the karyological level while morphological characters overlap and no differences other then karyological have been found sufficient for their identification (KRÁL et al. 1981).

The analysis of distribution of karyologically determined specimens of *M. epiroticus* (KRÁL et al. 1980) shows that specimens of *M. arvalis* group, relatively common in Turkey (FELTEN et al. 1971), probably belong to *M. epiroticus*.

Microtus guentheri (DANFORD et ALSTON, 1880)

Material: Turkey — 50 km S from Ankara, 18.08.1977, 4 specimens (3 adult males, 1 adult female), skulls and bodies in alcohol, ISEZ 5265, 5272, 5277, 5278, leg. K. KOWALSKI et al.; Lebanon — Sannine Mts, 11—15.04. 1958, 7 specimens (sex?), skulls and skins, ISEZ 709—715, leg. K. KOWALSKI; Kammouha Mts, 5—7.04.1958, 3 specimens (sex?), ISEZ 716—718, leg. K. KOWALSKI.

Measurements: KOWALSKI (1958) and Table IV.

References: KOWALSKI (1958), KOCK and NADER (1983).

Remarks: On the basis of the criteria proposed by KOCK et al. (1972) and MORLOK (1978), the material studied was included to *M. guentheri*.

Microtus cf. *guentheri* (DANFORD et ALSTON, 1880)

Material: Syria — Krak de Chevaliers, owl pellets (33 maxilae, 46 right and 49 left mandibles), ISEZ 5176, leg. K. KOWALSKI et al.

Microtus cf. *irani* THOMAS, 1921

Material: Turkey — Toprakkale, owl pellets (57 maxillae, 72 right and 73 left mandibles), ISEZ 5164, leg. K. KOWALSKI et al.

Remarks: Three forms of *Microtus* (*guentheri*, *socialis* and *irani*) are difficult to distinguish in the fragmentary material. Material from Toprakkale is characterized by the development of additional „agrestis" loop in M^2 which is relatively common in *M. irani* (KOCK et al. 1972). We cannot, however, exclude the possibility of the occurrence of other *Microtus* species as well.

Table IV

Dimensions of *Microtus guentheri*

No.	Sex	Age	ToL	TL	FL	HE	CbL	BcL	LN	DL	MxTRL	MdTRL	BcB	ZyB	IC	RB	BcH
5265	♂	ad.	101	30	19	13	29.9	20.0	8.7	9.6	7.0	7.0	14.4	18.0	4.0	5.1	9.0
5272	?	juv.	122	26	20	12	27.0	17.0	7.7	8.3	6.2	6.0	12.4	15.5	3.8	4.4	8.0
5277	♂	subad.	131	28	20	11	27.3	17.0	7.7	8.5	6.0	5.9	12.8	15.7	3.6	4.3	8.3
5278	♂	ad.	134	33	20	13	28.1	17.9	7.7	9.0	6.5	6.8	14.1	16.2	3.9	4.9	8.2

Gerbillus mesopothamiae HARRISON, 1956

Material: Iraq — Ar-Ramadi Liwa, 1967, skin, ISEZ 4958, gift of Biol. Res. Centre, Baghdad.

Gerbillus sp.

Material: Iraq — 40 km E from Rutba, 27.07.1977, owl pellets (2 maxillae, 3 right and 3 left mandibles), ISEZ 5169, leg. K. KOWALSKI et al.; Akarkuf, 02.1976, owl pellets (1 maxilla), ISEZ 5058. leg. A. NADACHOWSKI and B. RZEBIK-KOWALSKA.

Tatera indica (HARDWICKE, 1807)

Material: Iraq — Baghdad, 1968, male, skull and skin, ISEZ 4954, gift of Biol. Res. Centre, Baghdad; Hatrah, 02.1976, owl pellets (3 maxillae, 2 right and 2 left mandibles), ISEZ 5090, leg. A. NADACHOWSKI and B. RZEBIK-KOWALSKA; Akarkuf, 02.1976, owl pellets (1 maxilla), ISEZ 5085, leg. A. NADACHOWSKI and B. RZEBIK-KOWALSKA.

Measurements: ISEZ 4954 — CbL: 40.4, BcL: 23.8, LN: 16.8, DL: 11.1, MxTRL: 6.7, MdTRL: 6.5, BcB: 16.8, ZyB: 20.0, IC: 6.9, RB: 6.0, BcH: 13.5.

References: NADACHOWSKI et al. (1978).

Meriones tristrami THOMAS, 1892

Material: Turkey — Belen, 22.07.1977, 1 male, skull and body in alcohol, ISEZ 5194, leg. K. KOWALSKI et al.; Syria — 26 km N from Tartous, 26.08. 1973, 1 male, subad., skull and body in alcohol, JS 22, leg. J. ŚMIEŁOWSKI; Iraq — 20 km E from Mosul, 6.09.1973, 2 specimens, 2 females (ad. and juv.), skulls and bodies in alcohol, JS 24—25, leg. J. ŚMIEŁOWSKI.

Measurements: Table V.

References: ŚMIEŁOWSKI (1978).

Meriones cf. *tristrami* THOMAS, 1892

Material: Turkey — Toprakkale, 17.08.1977, owl pellets (24 maxillae, 23 right and 27 left mandibles), ISEZ 5164, leg. K. KOWALSKI et al.; Syria — Krak de Chevaliers, 23.07.1977, owl pellets (22 maxillae, 43 right and 50 left mandibles), ISEZ 5176, leg. K. KOWALSKI et al.

Meriones cf. *libycus* LICHTENSTEIN, 1823

Material: Iraq — 40 km E from Rutba, 27.07.1977, owl pellets (2 maxillae, 2 right and 2 left mandibles), ISEZ 5169, leg. K. KOWALSKI et al.

Table V

Dimensions of *Meriones tristrami*

No.	Sex	Age	ToL	TL	FL	HE	CbL	BcL	LN	DN	MxTRL	MdTRL	BcB	ZyB	IC	RB	BcH
22	♂	subad.	275	138	31	17	32.9	21.0	—	10.4	5.1	4.9	14.4	16.5	5.3	5.0	10.7
24	♀	ad.	275	138	31	20	35.9	21.6	—	11.1	5.4	5.2	16.0	18.6	—	5.0	11.7
25	♀	juv.	206	107	29	17	27.8	17.0	—	8.3	4.1	4.0	14.6	13.2	5.9	4.3	10.2
5194	♂	ad.	275	149	31	19	—	—	—	—	5.0	5.0	—	—	—	—	—

Meriones cf. *crassus* SUNDEVALL, 1842

Material: Iraq — 40 km E from Rutba, 27.07.1977, owl pellets (9 maxillae, 16 right and 14 left mandibles), ISEZ 5169, leg. K. KOWALSKI et al.: Hatrah, 02.1976, owl pellets (40 maxillae, 36 right and 46 left mandibles), ISEZ 5090, leg. A. NADACHOWSKI and B. RZEBIK-KOWALSKA.

References: NADACHOWSKI et al. (1978).

Microspalax leucodon (NORDMANN, 1840)

Material: Turkey — 6 km W from Bergama, 26.09.1972, 1 specimen (mummified body) without skull, BD, leg. B. DOMINIAK; Syria — Krak des Chevaliers, 23.07.1977, owl pellets (1 left and 1 right mandible), ISEZ 5176, leg. K. KOWALSKI et al.

Apodemus mystacinus (DANFORD et ALSTON, 1877)

Material: Iraq — Qali Ali Beg, 9—11.08.1977, 5 specimens (2 males, 2 females, 1 juv.), damaged skulls and skins, ISEZ 5195, 5224—5226, 5261, leg. K. KOWALSKI et al.

Measurements: Table VI.

References: RZEBIK-KOWALSKA and NADACHOWSKI (1978).

Remarks: In Iraqi Kurdistan, where this species reaches its eastern limit of distribution (KOCK et al. 1972), it has been recorded only from Sarsank up to now (HATT 1959).

Apodemus flavicollis (MELCHIOR, 1834)

Material: Turkey — 12 km W from Edremit, 12.08.1973, 12 specimens (5 males, 7 females), skulls and bodies in alcohol. JS 1,2,4—8,10,11,16—18, leg. J. ŚMIEŁOWSKI; Iraq — 12 km W from Shaqlawa, 11.09.1973, 1 female, juv., skull and body in alcohol, JS 26, leg. J. ŚMIEŁOWSKI.

Measurements: Table VII.

References: ŚMIEŁOWSKI (1978).

Remarks: This is the second record of *A. flavicollis* in Western Asia Minor. The closest locality recorded is Sindirgi, about 125 km NE from Izmir (LEHMANN 1966).

Apodemus sylvaticus (LINNAEUS, 1758)

Material: Turkey — 5 km E from Sapanca, 16.07.1977, 2 specimens (1 male juv., 1 female), 1 skull and 2 skins, ISEZ 5268, 5273, leg. K. KOWALSKI et al.; Bolkar Dağlari, below Zanapa, 20.07.1977, 4 adult males, 4 skulls and 3 skins, ISEZ 5191—5193, 5274, leg. K. KOWALSKI et al.; Bolkar Dağlari,

Table VI

Dimensions of *Apodemus mystacinus*

No.	Sex	Age	ToL	TL	FL	HE	CbL	BcL	LN	DL	MxTRL	MdTRL	BcB	ZyB	IC	RB	BcB
5195	♀	ad.	252	129	25	19	—	—	—	—	—	—	—	—	—	—	—
5224	♀	ad.	241	124	25	18	—	—	—	—	—	—	—	—	5.0	5.0	—
5225	♂	ad.	240	127	25	—	—	—	—	7.4	4.7	5.0	—	13.5	4.5	5.0	—
5226	?	juv.	230	112	25	18	—	—	—	—	—	—	—	—	—	—	—
5261	♂	ad.	230	118	25	—	—	—	—	7.7	4.6	—	—	—	4.8	4.3	—

Table VII

Dimensions of *Apodemus flavicollis*

No.	Sex	Age	ToL	TL	FL	HE	CbL	BcL	LN	DL	MxTRL	MdTRL	BcB	ZyB	IC	RB	BcH
1	♂	subad.	209	107	—	—	24.6	16.0	—	7.0	4.1	3.9	10.8	12.7	4.5	4.6	7.6
2	♂	ad.	206	104	—	—	24.0	15.2	9.2	7.0	4.1	4.0	11.4	12.4	4.3	4.1	7.7
4	♀	juv.	197	106	—	—	23.3	14.9	—	6.7	3.9	3.9	10.5	12.4	4.3	4.0	7.6
5	♀	subad.	192	96	—	—	22.7	15.0	9.3	6.3	3.8	3.8	11.0	11.9	4.0	4.1	7.0
6	♀	ad.	201	110	—	—	23.8	15.2	9.3	6.7	4.0	3.9	11.0	12.0	4.1	4.4	7.4
7	♀	subad.	205	106	—	—	23.6	15.3	9.6	6.5	3.9	3.8	10.5	11.7	4.0	4.2	7.2
8	♂	juv.	173	89	—	—	21.3	14.0	—	5.8	3.8	3.9	10.0	10.5	3.7	4.0	7.0
10	♀	juv.	163	86	—	—	20.1	13.3	7.1	5.6	3.9	3.9	10.0	10.2	3.9	4.0	7.0
11	♀	ad.	205	106	—	—	23.3	15.1	—	6.5	3.8	3.7	10.8	11.9	4.0	4.0	7.4
16	♀	subad.	—	—	—	—	23.0	15.1	—	6.5	4.0	3.9	10.5	11.6	4.1	4.0	7.4
17	♂	ad.	—	—	—	—	24.0	15.8	—	7.0	3.8	3.7	11.1	12.0	4.5	4.0	7.8
18	♂	subad.	—	—	—	—	22.7	14.2	—	6.4	3.9	3.9	10.9	11.6	4.1	3.9	8.1
26	♀	juv.	147	77	20	14	19.8	12.8	—	5.3	—	4.1	—	10.0	4.0	3.8	7.4

above Zanapa, 19.07.1977, 2 adult males, skulls and skins, ISEZ 5263, 5266, leg. K. KOWALSKI et al.

Measurements: Table VIII.

Remarks: On the basis of morphological criteria of teeth and skull, and some external features summarized by RUPRECHT (1979) the specimens were included to *A. sylvaticus*.

Rattus rattus (LINNAEUS, 1758)

Material: Turkey — Ankara, 24.09.1973, 1 specimen, skull and body in alcohol JS 28, leg. J. ŚMIEŁOWSKI; Toprakkale, 17.08.1977, owl pellets (1 right mandible), ISEZ 5164, leg. K. KOWALSKI et al.: Syria — Krak de Chevaliers, 23.07.1977, owl pellets (3 maxillae, 5 right and 2 left mandibles), ISEZ 5176, leg. K. KOWALSKI et al.; Cyprus — Paphos, 08.1986, owl pellets (70 maxillae, 72 right and 70 left mandibles), ISEZ 7992, leg. K. KOWALSKI and B. RZEBIK-KOWALSKA.

Measurements: JS 28 — CbL: 33.4, BcL: 21.4, LN: 13.0, DN: 9.3, MxTRL: 6.2, MdTRL: 6.0, BcB: 14.0, ZyB: 15.2, IC: 6.3, RB: 5.4, BcH: 10.5.

Mus cf. *abbotti* WATERHOUSE, 1837

Material: Turkey — Silivri, 21.08.1977, 2 females, skulls and bodies in alcohol, ISEZ 5253, 5281, leg. K. KOWALSKI et al.; Afyon Karahisar, 17.07. 1977, 1 female, skulls and skin, ISEZ 5248, leg. K. KOWALSKI et al.; 12 km W from Edremit, 12.08.1973, 4 specimens, 3 males and 1 female, skulls and bodies in alcohol, JS 3, 9, 12, 13, leg. J. ŚMIEŁOWSKI; Toprakkale, 17.08.1977, owl pellets (34 maxillae, 39 right and 44 left mandibles), ISEZ 5164, leg. K. KOWALSKI et al.; Syria — 26 km N from Tartous, 26—27.08.1973, 4 specimens (2 males, 2 females), skulls and bodies in alcohol, JS 19—21, 23, leg. J. ŚMIEŁOWSKI; Krak de Chevaliers, 23.07.1977, owl pellets (66 maxillae, 113 right and 131 left mandibles), ISEZ 5176, leg. K. KOWALSKI et al.; Cyprus — Paphos, 08.1986, owl pellets (250 almost complete skulls and several hundred fragments of maxillae, 1087 right and 1100 left mandibles), ISEZ 7992, leg. K. KOWALSKI and B. RZEBIK-KOWALSKA; Iraq — Qali Ali Beg, 9—11.08.1977, 18 specimens (11 males, 3 females, 1 juv., 3 sex undetermined), 18 skulls and 13 skins, ISEZ 5196, 5227—5229, 5231, 5233, 5235—5240, 5242, 5249—5252, 5262, leg. K. KOWALSKI et al.; Serchinar, 7.08.1977, 2 specimens (1 female, 1 sex undetermined), 2 skulls and 1 skin, ISEZ 5232, 5234, leg. K. KOWALSKI et al.; Hudeit, 6.08.1977, 2 specimens (1 male, 1 female), skulls and skins, ISEZ 5243, 5245, leg. K. KOWALSKI et al.; Tharthar Lake, 2.08.1977, 3 specimens (2 males, 1 female), skulls and bodies in alcohol, ISEZ 5244, 5246—5247, leg. K. KOWALSKI et al.; Akarkuf, 02.1976, owl pellets (14 maxillae, 24 right and 25 left mandibles), ISEZ 5085, leg. A. NADACHOWSKI and B. RZEBIK-KOWALSKA.

Table VIII

Dimensions of *Apodemus sylvaticus*

No.	Sex	Age	ToL	TL	FL	HE	CbL	BcL	LN	DL	MxTRL	MdTRL	BcB	ZyB	IC	RB	BcH
5268	♂	juv.	188	99	22	15	—	—	9.1	—	—	—	—	—	4.2	3.9	—
5191	♂	ad.	197	98	21	15	—	—	9.2	6.4	4.0	4.0	—	—	4.3	4.5	—
5192	♂	ad.	199	110	22	15	—	—	9.2	—	—	—	—	—	4.1	—	—
5193	♂	ad.	180	92	21	14	—	—	—	7.0	3.6	—	—	—	4.0	3.9	—
5263	♂	ad.	175	92	21	17	24.9	12.0	8.8	6.8	3.9	4.0	11.5	—	4.3	4.2	7.4
5266	♂	ad.	179	97	21	17	24.7	11.3	8.6	6.8	4.0	3.9	11.4	11.6	4.0	4.4	7.9

Measurements: Table IX.

References: NADACHOWSKI et al. (1978), ŚMIEŁOWSKI (1978).

Remarks: Four biochemical groups of the genus *Mus* LINNAEUS, 1758 (named *Mus* 1, *Mus* 2, *Mus* 3, *Mus* 4) have been shown to occur among European mice on the basis of electrophoretic studies (THALER et al. 1981). They are defined as subspecies of *Mus musculus* LINNAEUS, 1758, or are treated as separate species. The correlation between the biochemical groups and the appropriate taxonomic names is as follows (acc. to KRATOCHVIL 1986a, 1986b):

Mus 1 = *Mus domesticus* RUTTY, 1772

Mus 2 = *Mus musculus* LINNAEUS, 1758

Mus 3 = *Mus spretus* LATASTE, 1883

Mus 4A = *Mus abbotti* WATERHOUSE, 1837 (= *Mus spicilegus* „South" sensu ORSINI et al. 1983)

Mus 4B = *Mus hortulanus* NORDMANN, 1840 (= *Mus spicilegus* „North" sensu ORSINI et al. 1983).

M. domesticus and *M. musculus* are generally allopatric, showing a narrow hybride zone along the line connecting the Baltic Sea and the Black Sea. The former taxon is only commensal while the later is both commensal and feral. The occurrence of *M. spretus* is restricted to the Western Mediterranean; it is sympatric with *M. musculus*. *Mus hortulanus* occurs in South and SW Europe and certainly interacts with *M. domesticus* and *M. musculus*, possibly also with *M. abbotti*. The latter one, a short-tailed mouse, is probably the only one widespread in the Near East. The taxa under discussion show some minor morphological differences in the structure of the skull and dentition summarized by ORSINI et al. (1983) and KRATOCHVIL (1986a, 1986b). We provisionally included our materials into *M. abbotti* while detailed studies are in preparation.

Nesokia indica (GRAY, 1830)

Material: Iraq — Mosul (Al Mawsil) Liwa, 1967, 1 specimen, skull and skin, ISEZ 4956, gift of Biol. Res. Centre, Baghdad; Akarkuf, 02.1976, owl pellets (1 maxilla, 1 right and 1 left mandibles), ISEZ 5085, leg. A. NADACHOWSKI and B. RZEBIK-KOWALSKA; Hatrah, 02.1976, owl pellets (1 maxilla), ISEZ 5090, leg. A. NADACHOWSKI and B. RZEBIK-KOWALSKA.

References: NADACHOWSKI et al. (1978).

Eliomys melanurus (WAGNER, 1839)

Material: Iraq — Hatrah, 02.1976, owl pellets (1 maxilla, 1 right and 1 left mandibles), ISEZ 5090, leg. A. NADACHOWSKI and B. RZEBIK-KOWALSKA.

References: NADACHOWSKI et al. (1978).

Remarks: *E. melanurus* is widely distributed in Lebanon, Jordan, Israel and Synai (NADER et al. 1983). In Iraq it is recorded, up to now, from Hatrah and near Mosul (KAHMANN in NADACHOWSKI et al. 1978).

Table IX

Dimensions of *Mus* cf. *abbotti*

No.	Sex	Age	ToL	TL	FL	HE	CbL	BcL	LN	DL	MxTRL	MdTRL	BcB	ZyB	IC	RB	BcH
5253	♀	subad.	150	67	17	14	21.2	13.7	8.5	5.8	3.6	3.4	9.8	11.9	3.7	3.6	7.8
5281	♀	ad.	155	71	17	14	21.6	14.0	7.8	6.2	3.6	3.3	9.9	11.8	3.6	3.5	6.9
5248	♀	juv.	133	58	17	12	—	—	—	—	—	—	—	—	—	—	—
3	♂	ad.	167	74	—	—	22.5	—	—	—	—	—	—	—	—	—	—
9	♀	ad.	164	73	—	—	22.3	—	—	—	—	—	—	—	—	—	—
12	♂	juv.	150	72	—	—	—	—	—	—	—	—	—	—	—	—	—
13	♂	juv.	150	70	—	—	—	—	—	—	—	—	—	—	—	—	—
19	♂	subad.	150	71	16	12	21.0	—	—	—	—	—	—	—	—	—	—
20	♂	subad.	138	67	16	—	20.0	—	—	—	—	—	—	—	—	—	—
21	♀	subad.	126	59	—	—	19.8	—	—	—	—	—	—	—	—	—	—
23	♀	?	117	53	15	—	—	—	—	—	—	—	—	—	—	—	—
5196	♂	subad.	131	60	16	12	—	—	7.5	—	—	—	—	—	3.4	3.5	—
5227	?	juv.	135	63	13	11	—	—	—	—	—	—	—	—	3.5	—	—
5228	♂	ad.	145	55	—	16	—	—	8.0	5.9	3.5	3.2	—	—	3.4	—	—
5229	♂	subad.	144	59	15	—	—	—	8.1	6.1	3.4	3.2	—	11.4	3.5	3.6	—
5231	♀	subad.	142	62	17	14	20.2	13.4	7.7	5.4	3.5	3.4	9.4	10.9	3.8	3.3	7.0
5233	♂	subad.	—	—	—	—	—	—	8.3	6.8	3.4	3.3	—	11.8	4.0	3.7	—
5235	♂	ad.	172	86	19	14	—	—	—	6.0	3.3	3.1	—	—	3.6	3.6	—
5236	♀	subad.	139	60	17	12	—	—	7.5	6.6	3.3	3.2	—	—	3.8	3.4	—
5237	?	juv.	123	53	16	—	—	—	—	6.2	—	—	—	—	3.5	3.0	—
5238	?	subad.	149	68	18	13	—	—	—	6.5	—	—	—	—	3.5	3.5	—
5239	♀	juv.	—	—	16	—	—	—	—	5.6	3.5	3.3	—	—	—	—	—
5240	♂	subad.	145	65	17	14	—	—	7.4	5.6	—	—	—	—	3.7	3.6	—
5242	♂	subad.	142	62	16	—	20.3	13.0	7.3	5.5	3.4	3.4	9.2	11.3	3.6	3.4	7.0
5249	♂	juv.	—	65	16	—	—	—	8.1	6.3	—	3.2	—	—	3.7	3.6	—
5250	?	subad.	148	65	16	13	—	—	—	—	—	3.2	—	—	3.7	3.4	—
5251	♂	ad.	152	70	20	12	—	—	—	6.9	3.4	3.1	—	—	3.5	3.2	—

5252	♂	subad.	140	58	17	12	—	—	8.0	5.9	3.3	—	—	—	3.5	3.7	—
5262	♂♂♀	ad.	156	71	19	14	—	—	—	—	3.6	3.6	—	—	—	—	—
5232	♀	subad.	139	59	14	13	19.1	—	7.2	5.4	3.4	3.2	8.7	10.6	3.7	3.4	7.0
5234	?	juv.	—	—	—	—	—	—	—	5.9	—	3.3	—	—	3.8	—	—
5243	♀	subad.	138	68	17	14	19.3	12.9	6.8	5.3	3.4	3.3	8.8	10.3	3.5	3.2	6.6
5245	♂♂	ad.	158	79	18	13	—	—	7.4	5.9	3.4	—	—	—	—	—	—
5244	♂♂♀	subad.	145	78	17	12	19.1	12.3	7.0	5.5	3.1	3.0	8.7	10.3	3.5	3.1	6.3
5246	♂♀	ad.	160	77	16	—	20.4	13.2	—	6.2	3.3	3.0	9.2	11.5	3.6	3.4	6.7
5247	?	ad.	170	84	18	15	22.0	14.2	8.6	6.6	3.4	3.4	8.9	10.8	3.6	3.5	7.2

Jaculus jaculus (Linnaeus, 1758)

Material: Syria — 100 km E from Damascus, 26.07.1977, 1 specimen, damaged skull and body in alcohol, ISEZ 5276, leg. K. Kowalski et al.; Iraq — 40 km E from Rutba, 27.07.1977, owl pellets (5 maxillae, 5 right and 6 left mandibles), ISEZ 5169, leg. K. Kowalski et al.; Hatrah, 02.1976, owl pellets (37 maxillae, 44 right and 41 left mandibles), ISEZ 5090, leg. A. Nadachowski and B. Rzebik-Kowalska.

References: Nadachowski et al. (1978).

Allactaga euphratica Thomas, 1881

Material: Iraq — Hatrah, 02.1976, owl pellets (22 maxillae, 7 right and 10 left mandibles), ISEZ 5090, leg. A. Nadachowski and B. Rzebik-Kowalska.

References: Nadachowski et al. (1978).

Hystrix indica Kerr, 1792

Material: Turkey — Antalya, 1.09.1976, 1 specimen, skull, ISEZ 5068, leg. K. Kowalski; Iraq — 20 km N from Shaqlawa, 12.09.1973, two spines: one from the tail — short and thick and the other fine and long — from the back, JS 39, 40, leg. J. Śmiełowski (1978).

References: Śmiełowski (1978).

Carnivora

Canis aureus Linnaeus, 1758

Material: Iraq — Khanaquin, 12.05.1943, 1 specimen, skin, ISEZ 1085, leg. J. Sagan.

Vulpes vulpes (Linnaeus, 1758)

Material: Iraq — Khanaquin, 27.04.1942, 1 specimen, skull, ISEZ 1084, leg. S. Sagan.

Meles meles Linnaeus, 1758

Material: Iraq — 20 km N from Shaqlawa, 12.09.1973, 1 specimen, skull without mandible (CbL = 115.1), JS 29, leg. J. Śmiełowski.

References: Śmiełowski (1978).

Remarks: The badger is relatively widely distributed in Turkey, Lebanon and Palestine, and belongs to *M. meles canescens* Blanford, 1875 (Kock and

KINZELBACH 1982). In Iraqi Kurdistan, it was recorded, up to now, from Qali Ali Beg (SANBORN 1940 acc. to HARRISON 1968), Mosul, Sharanish 120 km N from Mosul, and Bnenan 60 km NE from Mosul (AL-ROBAAE 1976).

Hyaena hyaena (LINNAEUS, 1758)

Material: Iraq — Khanaquin, 2.03.1943, 1 specimen, skull and skin, ISEZ 1083, leg. J. SAGAN.

Artiodactyla

Gazella sp.

Material: Iraq — Khanaquin, 17.05.1943, 1 specimen, skull and skin, ISEZ 1086, leg. J. SAGAN.

Capra aegagrus (ERXLEBEN, 1777)

Material: Turkey — Erzurum, 1934, 1 specimen, skull, male juv., ISEZ 1201. leg. T. VETULANI; Iraq — Khanaquin, 1.05.1945, 1 specimen, horns, ISEZ 1708, leg. J. SAGAN.

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STRESZCZENIE

Ssaki z Bliskiego Wschodu zostały zebrane głównie w latach 1972—1986 i zgromadzone, prawie wyłącznie, w dwóch kolekcjach: w Zakładzie Zoologii Systematycznej i Doświadczalnej PAN w Krakowie i w Zakładzie Zoologii

Akademii Rolniczej w Poznaniu. Materiały pochodzą z ponad 40 stanowisk z terenu Turcji, Syrii, Libanu, Izraela, Cypru i Iraku. W pracy zebrano informacje o 47 taksonach ssaków z następujących rzędów: owadożerne (5 taksonów), nietoperze (8), zajęczaki (1), gryzonie (27), drapieżne (4) i parzystokopytne (2). Dla większości gatunków podano wymiary zewnętrzne i wymiary czaszki, a dla niektórych przedyskutowano ich pozycję systematyczną i rozmieszczenie.

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